

Claims

[1]

What is claimed is:

1. Flat-folded personal respiratory device or faces mask comprising:
a first portion and a second portion, connecting with each other along at least one common edge, flat-foldable along the common edge(s);
securing mean to secure said face-mask on the face of a wearer thereby forming an effective respiratory seal as the wearer inhale and release the respiratory seal as the wearer exhale; and
filtering mean to filter inhaling air.
2. Flat-folded breathing-mask as claimed in claim 1 wherein said effective respiratory seal covers a minimum yet essential area of nose (33), chin (35) and two symmetrical edges (34) connecting (33) and (35).
3. Flat-folded breathing-mask as claimed in claim 2 wherein said essential area is adaptive to an extensive range of face sizes which is defined by eye-to-chin distance at least range from 94mm to 104mm as shown in figure 16 and figure 17.
4. Flat-folded breathing-mask as claimed in claim 1 wherein said securing mean includes an elastic headband providing holding force (F) at location substantially away from the periphery of the face-mask.
5. Flat-folded breathing-mask as claimed in claim 1 wherein said filtering mean includes the main body of the breathing-mask made of filtering sheet material
6. Flat-folded breathing-mask as claimed in claim 1 wherein said filtering mean includes a filter part integrated in the main body of the face-mask.
7. Flat-folded breathing-mask as claimed in claim 1 wherein said filtering mean includes a user replaceable filter part.
8. A process for making flat-folded personal respiratory device or a face-mask as claimed in claim 1 comprising:
first step of folding a roll of sheet material along the length of the sheet material;
second step of welding the folded sheet material along pre-defined edge(s); and
third step of cutting the shape of the face-mask in the flat-folded configuration out of the roll of sheet material.
9. A process for making flat-folded personal respiratory device or a face-mask as claimed in claim 6 wherein said roll of sheet material includes as least two layers construction.
10. A process for making flat-folded personal respiratory device or a face-mask as claimed in claim 1 comprising:
first step of folding a flat sheet material;
second step of welding the folded sheet material along pre-defined edge(s); and
third step of cutting the shape of the face-mask in the flat-folded configuration out of the sheet material.

11. A process for making flat-folded personal respiratory device or a face-mask as claimed in claim 8 wherein said sheet material includes as least two layers construction.